



UNITED STATES PATENT AND TRADEMARK OFFICE

nz

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,316	10/29/2003	John W. Diachina	4015-5164	7576
24112	7590	07/12/2007		
COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER AGA, SORI A	
			ART UNIT 2609	PAPER NUMBER
			MAIL DATE 07/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/696,316

Applicant(s)

DIACHINA ET AL.

Examiner

Sori A. Aga

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/29/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Mitts et al (US 5,940,371) (herein after Mitts) in view of JOKIMIES (US 2001/0011019 A1) (herein after Jokimies)

Claim 1: A re-selection method for switching a packet data session from a first packet data channel of a cellular communication network to a second packet data channel in another cell is claimed. Mitts teach a method of maintaining the composition of transferred data during handover. A person having ordinary skill in the art would know a hand over in a wireless network involves a re-selection of new serving cell in the midst of a data communication session.

Regarding the method of:

- Beginning a packet data session on a packet data channel in a first cell; Mitts teaches "...maintaining the composition of the data carried in data cells during a handover in a system which transfers data as data cells ..." (column 1 line 6-10). A person having ordinary skill in the art would know data cells that are carried during a handover in a wireless system indicate a communication session that has already started.

Art Unit: 2609

- However, Mitts does not teach monitoring the channel quality of adjacent control channels in adjacent cells; However Jokimies in the same field of endeavor as Mitts (mobility in wireless communication) teaches: "...mobile phone monitors the power of signals transmitted by other adjacent base stations..." (Paragraph 0002 line 16-18). Jokimies also teaches that the signals monitored for power strength are control channel signals - "...mobile phone...receives...BCCH signals (Broadcast Control CHannel) and runs through them in their order of strength...and begins to operate in a suitable cell with the strongest signal..." (Paragraph 0009 lines 2-6). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include monitoring the channel quality of adjacent control channels in order to have a better pool of selection in determining what base station to forward the communication session.
- However Mitts does not teach identifying one or more adjacent control channels as potential re-selection candidates. However, Jokimies teaches: "...phone generates a list of possible new cells in addition to the current cell..." (paragraph 0060 line 8,9). A person having ordinary skill in the art would consider generating a list as identifying. Therefore, it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include identifying one or more adjacent control channels as potential re-selection candidates in order to further the selection process and systematically narrow down the list from the above said monitored channels.
- However Mitts does not teach reading at least part of the broadcast information on the control channel identified as a re-selection candidate. However Jokimies teaches:

“...In order to be able to select ... the most advantageous operator ...the phone...decodes the SID codes (System IDentification) from the signals transmitted by the base stations...” (Paragraph 0017 lines4-8). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts’ method to include reading SID codes from the broadcast made by the identified channel in order to be able to tune to the frequency, which the received SID code indicates to be the most advantageous operator.

- However Mitts does not teach when a predetermined re-selection criteria is met, switching to a new packet data channel in the cell. However, Jokimies in figure 3 shows that the re-selection can be based on highest C1 value (re-selection criteria). Jokimies teaches that C1 “...describes the power level received by the mobile phone from the examined base station...” (Paragraph 0014). Therefore, Jockimies teaches re-selection based on a predetermined re-selection criteria (i.e. signal power level as represented by the value C1). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts’ method to include switching to a new packet data channel in the cell when a predetermined re-selection criteria (minimum signal power level) is met in order to ensure handoff only happens when the newly selected channel is within acceptable distance (and hence a set minimum communication quality).
- Regarding resuming the data session on new channel, Mitts teaches “...the new base station continues the transmission by starting from the first failed cell...” (Abstract line 8).

Claim 2: all the limitations of claim 1 are included in claim 2. The references teach all the limitations of claim 1. Regarding the criteria for re-selection being based upon a signal quality measure: Mitts does not explicitly teach re-selection based on a signal quality measure. However, Jokimies teaches re-selection based upon signal power level as measured by the mobile station. A person having ordinary skill in the art would consider a signal power measure as a signal quality measure. Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include re-selection of channels based on signal quality measure in order to determine the closest channels among the possible many candidates.

Claims 3 and 4: all the limitations of claim 1 are included in claims 3 and 4. The references teach all the limitations of claim 1. Regarding the criteria for re-selection being based upon signal strength, Mitts does not teach signal strength to be used as a re-selection factor. However Jokimies teaches re-selection based upon signal power level as measured by the mobile station. Signal strength is considered to be substantially the same as signal strength. Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include re-selection of channels based on signal strength measure in order to determine the closest channels among the possible many candidates.

Claim 5: all the limitations of claim 4 are included in claim 5. The references teach all the limitations of claim 4 as discussed above regarding claim 4. Regarding the adjacent control channel being identified as a re-selection candidate when it is one of the n strongest control channels; Mitts does not teach identifying a channel as a candidate

when it is one of the n strongest control channels. However Jokimies teaches:

“...calculate $C1$ and $C2$ for N cells with highest level...” (paragraph 0070). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts’ method to include identifying a channel as a candidate when it is one of the n strongest control channels to further the selection process and narrow down the list .

Claim 6: all the limitations of claim 4 are included in claim 6. The references teach all the limitations of claim 4 as discussed above regarding claim 4. Regarding the adjacent control channel being identified as a re-selection candidate when received signal strength reaches a predetermined threshold, Mitts does not explicitly teach identifying a channel as a candidate when received signal strength reaches a predetermined threshold. However Jokimies teaches the step of checking whether $C1 > 0$. Therefore Jokimies teaches that in the case where there are cells with signal strength levels $C1 > 0$, a priority cell with the highest $C2$ is selected amongst these signals. $C1 > 0$ is therefore a threshold used by Jokimies to identify adjacent control channels as re-selection candidates. Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts’ method to include identifying a channel as a candidate when received signal strength meets the condition $C1 > 0$ in order to avoid unnecessary enlisting of candidate channels for transfer that would be too weak for handover.

Claim 7: Regarding claim 7 where A reselection method is claimed, Jokimies and Mitts teach a re-selection method as discussed above regarding claim 1.

Regarding the step of beginning a communication session on a traffic session on a traffic channel in a first cell; Mitts teaches a data communication handover as discussed above

Art Unit: 2609

regarding claim 1. Person having ordinary skill in the art would know data communication session is a communication session.

- Regarding reading the broadcast information on the adjacent control, Mitts does not teach reading at least part of the broadcast information on the control channel identified as a re-selection candidate. However Jokimies teaches: "...In order to be able to select ... the most advantageous operator ...the phone...decodes the SID codes (System IDentification) from the signals transmitted by the base stations..." (Paragraph 0017 lines4-8). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include reading SID codes from the broadcast made by the identified channel in order to be able to tune to the frequency, which the received SID code indicates to be the most advantageous operator.
- Regarding switching to a new traffic channel when a predetermined selection criteria is met, Mitts does not teach when a predetermined re-selection criteria is met, switching to a new traffic channel in the cell. However, Jokimies in figure 3 shows that the re-selection can be based on highest C1 value (re-selection criteria). Jokimies teaches that C1 "...describes the power level received by the mobile phone from the examined base station..." (Paragraph 0014). Therefore, Jockimies teaches re-selection based on a predetermined re-selection criteria (i.e. signal power level as represented by the value C1). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include switching to a new traffic channel in the cell when a predetermined re-selection criteria (minimum signal power level) is met in order to ensure handoff only happens when the newly selected

channel is within acceptable distance (and hence a set minimum communication quality).

- Regarding resuming the data session on new channel, Mitts teaches "...the new base station continues the transmission by starting from the first failed cell..." (Abstract line 8).

Claim 8: all the limitations of claim 7 are included in claim 8. The references teach all the limitations of claim 8 as discussed above regarding claim 8. Regarding the criteria for re-selection being based upon a signal quality measure: Mitts does not explicitly teach re-selection based on a signal quality measure. However, Jokimies teaches re-selection based upon signal power level as measured by the mobile station. A person having ordinary skill in the art would consider a signal power measure as a signal quality measure. Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include re-selection of channels based on signal quality measure in order to determine the closest channels among the possible many candidates.

Claims 9 and 10: all the limitations of claim 8 are included in claim 9. The references teach all the limitations of claim 8 as discussed above regarding claim 8. Regarding the signal quality measure being a measure of received signal strength, Mitts does not teach signal strength to be used as a re-selection factor. However Jokimies teaches re-selection based upon signal power level as measured by the mobile station. Signal strength is considered to be substantially the same as signal strength. Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include re-

selection of channels based on signal strength measure in order to determine the closest channels among the possible many candidates.

Claim 11: all the limitations of claim 10 are included in claim 11. The references teach all the limitations of claim 8 as discussed above regarding claim 10. Regarding the adjacent control channel being identified as a re-selection candidate when it is one of the n strongest control channels; Mitts does not teach identifying a channel as a candidate when it is one of the n strongest control channels. However Jokimies teaches: "...calculate $C1$ and $C2$ for N cells with highest level..." (paragraph 0070). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include identifying a channel as a candidate when it is one of the n strongest control channels to further the selection process and narrow down the list.

Claim 12: all the limitations of claim 10 are included in claim 12. The references teach all the limitations of claim 10 as discussed above regarding claim 10. Regarding the adjacent control channel being identified as a re-selection candidate when received signal strength reaches a predetermined threshold, Mitts does not explicitly teach identifying a channel as a candidate when received signal strength reaches a predetermined threshold. However Jokimies teaches the step of checking whether $C1 > 0$. Therefore Jokimies teaches that in the case where there are cells with signal strength levels $C1 > 0$, a priority cell with the highest $C2$ is selected amongst these signals. $C1 > 0$ is therefore a threshold used by Jokimies to identify adjacent control channels as re-selection candidates. Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts'

method to include identifying a channel as a candidate when received signal strength meets the condition $C1 > 0$ in order to avoid unnecessary enlisting of candidate channels for transfer that would be too weak for handover.

Regarding Claim 13 where 'reading' from claim 1 comprises form a selection given, one of the selections listed in the claim are addressed. However since listing is presented in the alternative, a prior art teaching one of the selections shows anticipation.

- All the limitations of claim 1 are included in claim 13. The references teach all the limitations of claim 1. However, Mitts does not teach reading from said control channel system identification information. However Jokimies teaches: "...In order to be able to select ... the most advantageous operator ...the phone...decodes the SID codes (System IDentification) from the signals transmitted by the base stations..." (Paragraph 0017 lines4-8). Therefore it would have been obvious for a person having ordinary skill in the art to make Mitts' method to include reading SID codes from the broadcast made by the identified channel in order to be able to tune to the frequency, which the received SID code indicates to be the most advantageous operator.

Claim 14: All the limitations of claim 14 are considered to be substantially the same as all claims included in claim 13.

Art Unit: 2609

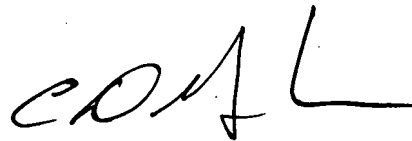
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sori A. Aga whose telephone number is (571) 270-1868. The examiner can normally be reached on M-Th 7:30-5:00, F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571) 270-1868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.A.



CHARLES D. GARBER
SUPERVISORY PATENT EXAMINER